RAIL SERVICE TO NEWTON UPPER FALLS AND NEEDHAM

Comprehensive Planning Advisory Committee

T R A N S P O R T A T I O N P L A N

Light Rail Extension in the Needham Street Corridor

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Project Description and Overview

An overview follows of the proposed light rail line from Newton to Needham, via the Green Line. Rail service is warranted because this corridor joining Newton and Needham has a high (growing) density of residential, commercial, and office development. Overall, the number of jobs, the residential density, and the number of commuters to the urban core supports the feasibility of light rail access. Finally, with the re-establishment of light rail transit, there is an opportunity to create less auto-dependent and more pedestrian friendly transit-oriented "village" environments along the corridor.

The Plan: a general overview

The rail line that is proposed would parallel Needham Street in Newton, from Cook's Corner to the old Newton Upper Falls depot, and then continue into Needham parallel to Highland Avenue. The proposal advocates for a dual track and electrified line, providing service via the Fenway portal of the Green Line, into Copley station, and then continuing to Park Street. It should connect with the MBTA "D" line between the Eliot and Newton Highlands stations. An intermediate station should be created at Newton Upper Falls, with a terminal station in Needham, either at Needham Heights or in Needham Center. The possibility of other intermediate stations could be explored, such as one that would be placed at the end of Chandler Place, near the new Avalon at Newton Highlands apartment complex.

Recently, the MBTA studied the feasibility of extending commuter rail service into Needham and to Route 128 via this corridor. The MBTA study concluded that the commuter line would incur a high cost and stimulate little further ridership along the Needham commuter rail line. Instead, the study supported that a pattern of travel from Route 128 to the Green Line, as already provided by a jitney private bus service, would be more favorable in meeting demand. One reason presented in this study in support for the Rt. 128 to Green Line connection is the shorter travel time to downtime Boston via this route as compared to the West Roxbury – Forest Hills route.

Currently, there exists a partially abandoned railroad grade behind Needham Street. This is a remnant of the old *NY-NH-Hartford* line which served as both a commercial and freight line well into this century. A portion of this line has been re-established for commuter service into Needham and Needham Heights, via West Roxbury and Forest Hills, and continues to serve that purpose today.

At the present, the railroad from Needham Heights to Newton Upper Falls is used for infrequent freight service, which is almost non-existent, with a spur passing accross Needham Street just west of the former Polaroid complex. The tracks continue to the Boston Edison substation at what was formerly known as Cook's Corner, near Curtis and Ramsdell Streets. In the past, the railroad merged with the *Boston & Albany* line (now the Riverside "D" line), between the Newton Highlands and Eliot stations. There is now about 100 yards of missing tracks at that old juncture.

In the early 1970s, the MBTA conducted a study planning future projects, called the CASS study. One of these projects involved looking at bringing rail service to Needham via Newton Upper Falls using the right-of-way paralleling Needham Street, with "D" line trolley cars branching off after Newton Highlands and continuing to Newton Upper Falls, crossing the Charles River, and terminating in Needham. Instead, the MBTA decided to proceed with the current scenario: heavy rail commuter service from South Station, through Forest Hills, into West Roxbury, and terminating in Needham.

Since that study 30 years ago, tremendous changes have occurred along this corridor. Traffic has increased, accompanied by a boom in both commercial and office development that has occurred along the entire Needham Street corridor and in the Needham Industrial Park. More recently, a number of new large-scale apartment and condominium developments have been built near the old rail line. It has become increasingly difficult and costly for residents of Newton and Needham neighborhoods to travel into Boston. Commuters coming to Newton Upper Falls and Needham Street suffer through congested roadways, numerous safety conflicts, and a pedestrian-hostile environment. There is a consensus that the seemingly unbridled growth and traffic congestion have led to a general lowering of the quality of life in this area. There is evidence that this has translated into lower commercial and residential desirability and valuations in this section of Newton.

Benefits of Rail Linkage:

Many planning organization, including the Newton Comprehensive Planning Advisory Committee (CPAC), recognize that well-planned rail facilities exercise a decidedly positive effect on local and regional economies. These effects may include new and expanded business, increased employment, a stronger local tax base, higher real estate values, greater safety, decreased air pollution, therefore lower health care costs, and possible heightened tourist revenue. Rail facilities can enhance economic activity in a number of ways:

1) Improved access to business for a potentially significant pool of customers.
2) Increase the public's sense that a community is a safe and desirable one in which to live. This perception will tend to attract businesses and new jobs.
3) One strategy to combat major forms of pollution.
4) Reduce the multiple costs associated with automobiles and sprawl. Rail facilities are cheaper to build and maintain than the automobile infrastructure. This includes lower accident rates, which in turn reduces related costs, such as those for police, medical care, and insurance.
5) Those who use rail transportation rather than the car can save money, some of which is then reinvested in the local economy.

Rail corridors and stations are a sound investment in the future economic growth of a community. They attract new businesses seeking a stronger customer base. Rail facilities can attract people by the hundreds or the thousands. A number of analyses have demonstrated that those who use these facilities spend money. The proximity of a rail facility has also been shown through surveys and economic analysis to increase local property values. This is exemplified by the increase in values in West Somerville in the decade since the Red Line extended to Porter

and Davis Squares, compared to the remainder of Somerville, as well as increased values along the Old Colony lines which opened in the late 1990's.

Economic vitality is not measured by the retail economy alone. In Newton and elsewhere, employees and residents see value in being able to choose the train as a mode of transportation. Employers have a built-in incentive to encourage employees to take the train to work, because this is more economical than automobile parking. Thus, there is a correlation between improved rail facilities and a more robust local and regional economy. There is a strong positive contribution to economic vitality at the local as well as regional level.

Policy Concerns and Transit

Many communities in this country are facing policy decisions regarding transit. The Newton Comprehensive Planning Advisory Committee has been formed with one of its missions being to make recommendations regarding transit in Newton. The Newton CPAC strongly supports the proposal to extend rail service along the Needham Street corridor. Both the public and our elected officials are voicing greater fears about the sustainability of our automobile-dependent society. There are concerns about obvious issues, such as traffic congestion and preserving the environment, but a growing issue is that of quality of life and social equity.

Issues of Concern supporting light rail transit to Needham

Traffic congestion:

The number of vehicle-miles driven by the population continues to rise at an alarming rate, unsustainable by increases in roadway infrastructure. A recent study points out that in the largest 39 U.S. metropolisis, the number of lane-miles of roadway increased 13.4% in the last decade, while the vehicle-miles driven increased 31.4%. In some towns, there are now more cars than people! As a result, traffic congestion is growing at rates of up to 60% per 3-5 years. Public opinion in most suburbs, including Newton, suggests that traffic congestion is among the key problems faced by communities. Some of the worst traffic congestion is now found in the suburbs of major cities. The social costs of traffic congestion are significant and include wasted time and energy, increased accidents and reduced economic productivity. Some estimates place the cost at $73 billion per year, or 2% of the GNP. Meanwhile, highway departments have learned (often the hard way!) that you cannot build your way out of congestion. New or expanded roads only stimulate demand, and the result is even more traffic.

Environmental concerns:

Air pollution is largely a product of our auto-dependent society. Cars are responsible for 40% of manmade hydrocarbon and nitrogen oxide emissions (which cause photochemical smog) and 70% of carbon monoxide emissions. The wear of tires and road dust contributes other damaging particulates to the air we breathe. Roadways and parking lots consume over 30% of developed land in the U.S., leading to premature loss of open space and wetlands, oil spill damage to the environment, and water pollution from draining automobile fluids and road salt. Currently,

about 50% of the petroleum used in the U.S. is burned by motor vehicles. Noise pollution has left neighborhoods next to expanded roadways devalued.

Quality of life issues:

Many people have a growing and unsettling feeling that there is something lacking with a lifestyle that relies only on cars for even nearby travel. A life which is spent driving from garage to strip-mall to gas station to work is certainly dreary and bleak. There is a movement to create pedestrian-oriented "traditional" towns, with wide sidewalks, mixed housing types, and nearby small retail and offices, which may stimulate increased public participation in community affairs. The culture of automobile isolation and sprawl, with its identical box stores and formless strip-malls replaces a spirit of friendliness with one of distrust and social privacy, leaving people lonely in the midst of many. Also, an automobile dominated society leaves many of our members without equity. At least 30% of the population cannot drive because they are too old, too young, or disabled. We owe these members of our society equal access to employment, educational, commercial, and cultural destinations. By establishing light rail service along the Newton to Needham corridor, many workers and residents would have the opportunity to utilize transit as an option for their travel needs and would promote a "village" type of development near the rail line's stations.

The case for Light Rail expansion

Extending Light Rail Transit (LRT) to Needham via Newton Upper Falls has many advantages from the perspective of feasibility. For one, there is already a connecting line to the major metropolitan business core that would take these trains in and out of Boston. Extending this line with a spur to the Upper Falls Depot would require only about 1 mile of additional track and railbed investment, with another 1 mile to Needham Heights. The project would adapt nicely to the existing landscape in that no property takings would be necessary, minimal fencing and signage would be created, and an interconnection would now exist between the residential neighborhoods of Elliot Street and those south of Needham Street. Pedestrians would have more access to the commercial establishments and offices along the corridor.

Because the rail line would be electrified, it would be environmentally less obtrusive. Unlike diesel commuter rail, these modern ADA-compliant light rail cars would not burn petrochemical fuels, light rail is relatively quiet, and its comparatively slow speeds make it compatible for further pedestrian-oriented development near the two stations. By providing people an alternative to the automobile, LRT will make a positive contribution to improving our neighborhood, bringing more people out into the community and increasing the diversity of options for shopping and recreating.

Innovation in community sustainability and increasing community vitality advocates a balance between auto use and non-auto use for mobility. Rail service to Needham will reduce the need for people to rely solely on the automobile and it will shift people away from the roads and speed up their trips. It will provide interconnectivity with the remainder of the Boston metropolitan area. The end result will support a community which is more "livable," and this

will lead to an increase in real estate values, increased opportunities for employment and business, and greater tax revenues.

Is there a demand for Rail Transit?

The success of rail transit is related to land-use decisions which shape the built environment. This is an issue of concern and discussion for Newton's planning effort, and the city is exploring all options that allow better integration of land use and transportation planning. It is recognized that transit is more often used by neighborhoods which have population densities and street systems which lead to easier pedestrian access to rail stations. Successful transit villages are interconnected to other transit villages to form a macro pattern of urban design. Often, high density uses are present near stations, such as retail, multi-use dwellings, and office structures. An integrated network of sidewalks exists, with shade trees, diverse styles of buildings, and an overall pedestrian friendly design.

The Newton Upper Falls neighborhood already possesses many of these characteristics. For instance, one may consider the hypothetical Newton Upper Falls station near the corner of Oak St. and Chestnut Street. In the quarter mile radius from that station, there are 505 dwelling units in the form of single family, two-family, and three-family houses, condominiums, and apartments. The Village Falls complex contains about 133 units, the area of Chestnut St. south of Elliot St. has 80 dwelling units, and the complex on Saco Street has 39 units. Average densities on surrounding streets are on the order of about 10 dwelling units per acre:

Wetherell St.:	7.6 d.u./acre
Mechanic St.:	25 d.u./acre
Cheney St.:	6.7 d.u./acre
Cheney Ct.:	12.4 d.u./acre
Linden St.:	7.2 d.u./acre
Cliff St.:	9.3 d.u./acre

In addition, there is a large amount of commercial and office development within the same quarter mile radius of the Newton Upper Falls depot. This includes the businesses along Chestnut St. and Oak St., where 156 Oak St. covers 483,583 sq.ft. with 428,300 sq.ft. of leasable space. On Needham Street, one quarter mile from the depot includes buildings up to the Filene's/Papa Gino's building, including the Marshall's Plaza (57,271 sq.ft. leasable) and the office building at 233 Needham Street (61,863 sq.ft. leasable).

Near the possible Chandler Place intermediate rail station, a similar high density of residential and commercial development exists. Within a one-quarter mile radius, about 900,000 of commercial real estate is currently existing. New businesses have sprouted in this region over the past several years. Also, there are approximately 700 dwelling units within the quarter mile radius, including the Avalon at Newton Highlands apartment complex which has recently opened. This project is the largest affordable housing complex built in Newton, and will generate a high demand for improved transit service along the corridor.

On the Needham side, the Needham Business Center and Highland Avenue Corridor represents a 215 acre site comprised of a mix of industrial, office, and retail uses. In addition, it contains a small area of residential use at the present. This region is a significant source of tax revenue for Needham, representing 8% of the town's total assessed valuation and yielding a totla of 12% of the town's property tax revenue. Currently, the site contains approximately 5 million square feet of commercial real estate. The town's long range plan for this region projects that redevelopment will yield a net increase of approximately 2.7 million square feet, bringing the site total to approximately 7.7 million square feet and increasing the overall density of the area from an FAR of 0.55 to about 0.85. Without a public transit plan that provides frequent, high capacity rail service, further growth of this vital area will be challenged by access limitations.

The importance of the quarter-mile radius is defined in studies which show that most people are willing to walk that distance from a rail station, either to go to work from the station, or to walk home from the station. This is actually a conservative estimate, as in some pedestrian-oriented towns, people are willing to walk up to one-half mile from transit to work, for instance. In addition to pedestrians walking to the proposed rail line, the opportunity exists for the MBTA to construct a commuter facility near Route 128 that would interconnect with the new rail service.

Extension of Light Rail is Consistent with Regional Transportation Goals

Recently, the Central Transportation Planning Staff (CTPS) and the Massachusetts Bay Transit Authority (MBTA) have collaborated in developing the Program for Mass Transportation (PMT). The PMT developed a draft list of System Expansion projects and has ranked the priority for each of these projects based on predetermined criteria. Included in this list is a project to extend light rail service from the MBTA Green Line in Newton Highlands to Needham, via Newton Upper Falls. Based on the criteria set forth by the PMT and the Boston Region Transportation Plan for 2004-2025, this project should be given a high priority for implementation.

The Newton-Needham Light Rail extension involves building a 2 mile spur off of the existing Green Line to access a high-density mixed use neighborhood in Newton (Newton Upper Falls and the Needham Street corridor) and an area of potentially burgeoning economic development in Needham (the Needham Industrial Park). The rail extension fulfills all important performance measures:

- Utilization: Because the line will pass through densely populated areas and a high concentration of commercial and office space, the utilization of this line will be very high, with considerable new transit riders brought into the system. It is likely that about 5,000 daily riders will use this system expansion initially, but with full build out of the area, closer to 10,000 riders will use the system per day.
- Mobility: Because mobility is currently constrained by tremendous traffic congestion in this area, the new line will not only attract new riders wishing a faster trip, but it will give people the opportunity to avoid driving, thereby reducing traffic congestion. Currently, the surrounding roadways carry huge traffic (Rt. 9 = 50,000/day, Rt. 128 = 150,000/day, and

Needham Street = 30,000/day). It is likely that auto use may be reduced by about 5-10,000 trips per day.

- Cost effectiveness: Because the project will utilize existing railbed, involve no property takings, and require only 2 miles of track construction, the costs will be minimal compared to most other transit projects. Meanwhile, the benefits of improved transit to a large ridership will be great. It is likely that this project can be completed for under $30 million, while servicing thousands of riders per day, yielding a favorable cost-per-trip ratio.
- Air quality: Because the new rail line will attract many new riders, most of whom are now driving cars, local and regional air quality will be improved. By giving travelers a rapid and convenient option to utilize transit, there will be an advantage to avoid driving.
- Service quality: Because this service will be a light rail line, with frequent trips, the quality of service will be excellent. The current commuter line runs about once every 1-2 hours, whereas the light rail line may run 4 – 6 times per hour. Because the travel time to Boston will be shorter than by driving or by taking the currently existing commuter line, an overall service quality improvement will be evident. Light rail will take about 20-25 minutes to get to Copley, compared to 35 minutes by the existing commuter rail, compared to 45 minutes by car during peak travel times.
- Economic/land use benefits: Because the rail line expansion will go into an area of densely populated communities with great potential for economic growth, this growth can take a transit oriented form. The result will be moderate to high density mixed-use development that allows for pedestrian oriented facilities and a high quality of life.
- Environmental justice: Because the Newton-Needham light rail expansion will allow reverse commuting to a high concentration of potentially lucrative jobs, people from all of Boston's neighborhoods will have immediate access to these jobs. The line connects to the Urban core, as well as to bus routes which will enable easy and inexpensive travel for inner city residents to access jobs that will be created in this region.

As one can see with this analysis, the Newton-Needham light rail connection will meet and exceed all of the criteria that must be met for implementation of a transit project. Most importantly, this project can be done quickly and will have tremendous economic impact. It will be an economic boon not only to the two towns involved, but also to the entire Boston MPO region and to the Commonwealth.

Conclusion and Recommendations

The Office of Commonwealth Development, the Commonwealth Capital program, and the Boston MPO, and the MBTA support transit projects that will result in greater transit utilization, lower traffic congestion, improved air quality, and stimulate economic growth and development in a socially responsible way. Therefore, further analysis and study should be undertaken into the feasibility of this important transit improvement. There is broad-based support for this project, both in Newton and in Needham. The Transportation component of Newton's Comprehensive Plan seeks to envision and propose transit improvements that will provide options to automobile travel and can be integrated with sensible land use planning. The Plan supports the notion of pedestrian-friendly transit village development. It is our hope that such development will at least partly counteract the unacceptable conglomerate of cars, traffic,

gridlock, air pollution, sprawl, and roadway expansion that we've seen over the past several decades.

By re-establishing rail service to Needham via Newton Upper Falls, there is the potential to improve the economic health and community vitality of the entire region. This transit solution will allow residents of the affected communities a way out of our current traffic problems. We recognize the interdependence that transportation plans have in shaping our environment. By advocating for the Needham rail line extension, development along the corridor will occur in a less autocentric manner, and be more similar to Newton's existing transit-oriented village centers.

The rail corridor owned by the MBTA which passes through Newton Upper Falls and continues to the Needham Heights station will be a vital link between the Riverside light rail system and the Needham commuter rail. Re-establishing rail service in this corridor, which intersects the Route 128 north-south corridor, will provide both access to the Boston city central core area and an opportunity for "reverse commuting." This area, already with a dense residential population, will continue to grow and experience an increased need for employees to staff its commercial and office complexes.

Newton and many of Boston's other suburbs, like most places in America, have grown more by chance than by choice over the past several decades. Expanding rail service to this part of the Boston metropolitan region will enhance the process of growth in land use and transportation in a positive and non-auto-oriented manner. Establishing light-rail service to the Newton Upper Falls - Needham Heights corridor would provide an economical, pedestrian-friendly, community enhancing method to create a thriving center of residential, commercial, and public activity.

Light Rail Extension to Newton Upper Falls and Needham

The Case for Rail Expansion

For a transit project to be successful, it must provide public benefits in numerous ways. In addition to improving mobility options and allowing alternatives to automobile use for transport, the project should have a positive impact on air quality and the environment. It should improve service quality for transit users and allow access between neighborhoods and jobs. It should promote economic and land use benefits in its surrounding area. Most importantly, it must fulfill criteria of cost effectiveness. The Transportation Plan as endorsed by the Comprehensive Planning Advisory Committee of the City of Newton supports the expansion of light rail from the existing Green Line in Newton Highlands, along the Needham Street corridor, and into Needham, where it will connect to the existing commuter rail at Needham Heights.

This analysis will provide an overview on certain aspects of this proposed rail line which make it a feasible and desirable public transportation project that should be undertaken as soon as it is feasible. Items to be covered include:

1) The scope of the proposal, extending a rail line from Newton Highlands to Needham Heights. In contrast to the proposal modeled by the MBTA as part of the Program for Mass Transportation process, the line should be extended only to Needham Heights, and not to Needham Junction.
2) Ridership numbers on this rail extension may be unexpectedly high, especially when an up-to-date analysis of current base demographic and economic situation and economics are considered. Planned growth in the corridor has not been fully taken into account in most previous analysis.
3) This document outlines some of the ongoing and planned development in the corridor which needs to be considered.

It is important to correctly assess and evaluate factors particular to this transportation corridor that will affect the priority of the proposed rail project. If these factors are considered in assessing the line, its favorability in terms of utilization, cost effectiveness, impact on air quality, and role as an asset in terms of economics and land use will be realized.

Scope of Project

The most effective utilization of this corridor is to build a light rail line from Newton Highlands to Needham Heights. The Needham Green Line extension has previously been modeled by the CTPS and the Program for Mass Transportation (PMT) to extend to Needham Junction, creating a much higher scope of project than is desirable or necessary. Since there is already commuter rail service to Boston from Needham Heights, Needham Center, and Needham Junction, it is unnecessary to extend light rail to this area. However, should there be a commuter rail extension to Millis (section 5C-49 in

the PMT), extending light rail to Needham Junction may become practical, as it would simplify commuter rail options farther southwest. Also, extending the line to Needham Junction would duplicate the existing bus route (#59), which directly parallels the rail line from Needham Heights to Needham Junction.

There is little new development or growth planned for the area of Needham farther out from Needham Heights. This area is a less densely populated region, with residential densities of about 5 dwelling units per acre. Therefore, extending the line to this part of Needham will not be cost effective in terms of new utilization and will not have much of an impact on existing or planned land use.

An analysis of this proposed line should have it terminating at Needham Heights. Containing the scope of the study to Needham Heights would still provide for a multimodal (light rail, commuter rail, bus) connection in Needham. The combined station at Needham Heights would be within 1 mile of most of the population of Needham. There is ample room at Needham Heights to accommodate a 2-3 track reverse-direction area for light rail cars to change direction after disembarking passengers. By stopping the new line at Needham Heights, the capital costs for the project would decrease by almost half, as the line would be about 2 miles long instead of 4 miles. The cost of the project would decrease from the $100 million projected by the PMT for a line to Needham Junction to about $50-60 million for a line to Needham Heights.

Future studies of this rail extension should consider an alternative that extends light rail from the Green line at Newton Highlands only to the existing commuter rail terminus at Needham Heights. The scope of the Needham light rail extension should include 4 stations: Needham Street, Newton Upper Falls, Rt.128/Needham Industrial Park, and Needham Heights.

Ridership: Utilization and Impact on Mobility

The PMT ridership analysis predicts that the daily ridership increase on mode for the Needham light rail extension will result in 3400 riders, with a net increase in daily transit ridership of 500. This is based on the line extending to Needham Heights and replacing the final two commuter rail stations on the existing commuter line from South Station. These numbers are too low, based both on the demographics of the immediate residential neighborhoods and the large volume of commercial space adjacent to the corridor.

Beginning on the Newton side, where a Needham Street station and a Newton Upper Falls station are proposed, most of the residential dwellings are located north of the proposed line. According to the US Census (2000), this part of Newton falls within census tract 3741, encompassing the area south of Route 9, east of the Charles River, and roughly west of Winchester Street (Reference: http://factfinder.census.gov). This census tract lies within a 10 minute walk from the proposed stations on the new line (mostly within 1/4 mile). There are 3964 residents who live within easy walking distance of the two new stations. Within ¼ of the Upper Falls station, there are about 505 dwelling units, including several apartment and condominium complexes. Near the Needham Street station, there are about 700 dwelling units within 1/4 mile, including the new AvalonBay apartment complex, which has added about 600 residents adjacent to the rail line, bringing the population to 4500 persons within walking distance of the two stations. The

AvalonBay project now has the largest number of affordable housing units in Newton. The overall residential density is about 7-10 units per acre north of the rail line, making this area appropriate for rail transit. (See: www.ci.newton.ma.us/Election/NewtonHighlands/avalon_apt.pdf).

Based on conservative estimates, about 15% of people will utilize a rail line that is within walking distance of their homes. Being that this is a light rail line with frequent service (perhaps 6 times per hour) and a schedule from about 5 AM to 1 AM, it is possible that ridership will approach 20%. Even in more auto-dominant suburbs, like Sharon, ridership on transit is near the 15% range, with an overall metropolitan area average of about 10% (Reference: Metropolitan Area Planning Commission). Therefore, ridership from residential uses, just for the two Newton stations, will be about 650, most of who will be new transit users.

On the southern side of the rail line, within 1/4 mile walking radius of the two stations, and including the village of Newton Upper Falls, there is a large amount of commercial space. Along Needham Street and its adjacent streets, there is about 2 million square feet of office, retail, and industrial space. In addition, there is about 500,000 square feet of additional commercial space in other areas within 1/4 to 1/2 mile distance from the proposed stops. Overall, that represents about 2.5 million square feet of commercial real estate, representing 15% of the tax base of Newton (Reference: Needham Street: Economics and Revenue Generation). As such, this area represents a significant source of jobs for our regional economy. Using an average of 766 square feet per worker for commercial buildings, there are about 3200 employees within walking distance of the rail line (Reference: Retail and Service Buildings, Energy Information Administration). If there is 15% utilization of transit, that represents about 550 workers using transit per day.

An analogous nearby region can be used for comparison and to validate the above estimate. In nearby Newton Centre, there are about 2000 dwelling units within 1/4 mile of transit, with a residential density of about 7.4 units/acre (Reference: Unsprawl Case Study http://www.terrain.org/unsprawl/2). Newton Centre has a mixed-use commercial core with 582,000 square feet of commercial space. Three are 1563 daily boardings on rail transit at the Newton Centre MBTA stop, with 1422 inbound riders and 141 outbound riders (Reference: Surface D Line Inbound Boardings, 1995). For the proposed new line, conservatively, about 1200 riders will walk to use the Newton segment of the Needham light rail extension per day.

In terms of the Needham segment, a station can be placed to access the Needham Industrial Park and the planned Needham Business Center. This is a 215 acre site comprised of a mix of industrial, commercial, office, and retail uses. There is also a small residential component at present. This 215 acre area is a significant source of tax revenue for Needham, representing 8% of the town's total assessed valuation and yielding a total of 12% of the town's property tax revenue (Reference: New England Business Center Executive Summary). Currently, the site contains approximately 5 million square feet of commercial real estate. The town plans to add about 2.5 million square feet of new development in this region, resulting in about 3250 new trips. This certainly qualifies the region as an economic powerhouse along the Route 128 corridor. Currently, this area is lacking efficient public transportation resources. It is estimated that the complex generates at least 6500 trips per day, with a total of 10,000 trips per day at full build-out expected. Further development of this site is jeopardized by concerns of traffic congestion. Providing convenient rail transit options, assuming 15% of employees would

use transit, would accommodate about 1500 trips per day. In addition, since this station would be near Rt. 128, more riders may be attracted to use the line for its direct access to Boston.

Finally, some new ridership would be generated at the Needham Heights station, where the light rail line would connect with commuter rail. Based on increased service frequency and a more rapid trip to Boston, more people may use this line than commuter rail, which carries about 460 riders per day. Several hundred new riders may be attracted to use the light rail line, bringing the total number of new riders for the new Needham rail extension to nearly 3000 for the line. This estimate far exceeds the 500 new riders predicted in the PMT draft document. In fact, boardings at each of the proposed stations would attract new transit riders, and at volumes similar or better to other Green line stations throughout the system.

Effect on Development and Reduction of Single-mode Auto Trips

The analysis above reflects current conditions and development that has been already planned, some of which is under construction and nearing completion. On the Newton side, there is tremendous potential for further economic growth of the Needham Street corridor. Most of this new economic development would integrate well with stations on the Needham light rail extension, allowing the opportunity for transit-oriented development. There are several underutilized parcels along Needham Street which currently contain single story buildings and large surface parking lots. It is likely that with the next upturn in the economy, these parcels may be more intensively developed. Also, as manufacturing uses continue to decline, there will be an opportunity for new mixed-use development, especially in light of the housing shortage in this area.

Currently, the 55 parcels along Needham Street have a land area of about 2.7 million square feet, with almost 900,000 square feet of leasable commercial space, representing an FAR of about 0.3 (Reference: Needham Street Economics and Revenue Generation). By incorporating light rail transit, the FAR could be increased to at least 0.5, and perhaps to 0.8 in places. That would add 1 million square feet of new space directly on Needham Street. The adjacent streets have a land area of about 2.3 million square feet and a current leasable space of about 1.1 million square feet. Allowing increases in FAR from 0.5 to 0.8 would create about 700,000 square feet of new space. Finally, in the area of Oak, Chestnut, and Elliot Streets, there is a commercial land area of about 1.4 million square feet with about 500,000 square feet of leasable space, for an FAR of about 0.3. In this area, doubling the density to 0.6 would create about 500,000 square feet of new space. Therefore, about 2.2 million square feet of new commercial real estate would be supported by a new light rail line, with stations that allow access within about a 1/4 mile radius. At 766 square feet per employee, about 3000 new jobs would be created. At a 15% transit utilization, that would create 450 additional new transit riders for the light rail service in Newton. Of course, if any of these parcels were to become medium density residential (30 dwelling units per acre), transit usage would be even higher. It is conceivable that at minimum, about 600 dwelling units can easily be added along the corridor, with about 200 additional new transit riders. If the community and city political structure would approve a higher FAR, the density and number of transit riders would certainly be higher.

Having an existing light rail line in the Needham Street corridor will create a focus to develop pedestrian-oriented, mixed-use projects as the current land uses are upgraded and developed in the

future. Already, this has happened with the Avalon Bay apartment complex, which will have nearly 300 housing units on a former industrial site. There are several characteristics in this neighborhood that will encourage development to occur in a transit-oriented mode:

- Interconnected Street System: The residential neighborhoods have streets that connect in a grid like pattern. In the future, it is anticipated that further connections will be made between the commercial parcels in the corridor. This will be more likely to happen with the institution of rail service.
- Local Destinations within Walking Distance: Within 1/4 mile of the rail line, there are residences, numerous shops, restaurants, and offices.
- Pedestrian-friendly design: With the advent of rail service, the area will develop a series of interconnected sidewalks, with landscaping and visible pedestrian routes.
- Topography Suitable for Walking: The land in this area is primarily flat and suitable for walking.
- Density and Pedestrian Scale: The density of residential and commercial spaces is adequate to support transit, but the buildings are not large towers. The footprint size and the heights of the buildings are small enough to give the area a human feel. With a transit node, the future development of this corridor will encourage an inviting character, especially if the stations are accessible by foot

Having light rail in the Needham Street corridor, and continuing to the Needham Business Center, will allow for further economic development throughout this corridor. The potential for transit-oriented development is great, as many of the characteristics that are necessary to support viable transit are already in existence.

Finally, the Needham Street corridor is overwhelmed with automobile traffic, congestion, and travel delays caused by high automobile utilization and poor transit access in this area. Currently, Needham Street carries about 30,000 vehicles per day, Route 128 carries about 150,000 vehicles per day, and Route 9 carries about 50,000 vehicles per day (Reference: Mass Highway). This places the Newton-Needham light rail corridor in one of the most automobile-congested areas of the Boston metropolitan region. Existing travel delays along Needham Street are about 86.74 vehicle-hours (total vehicle delay) (Reference: Needham Street Travel Delay, McMahon Associates). With ridership estimates of about 6000 trips per day along the new light rail line, it is likely that about 5000 trips can be reduced from both Needham Street and Route 9. This represents a significant reduction in traffic density for both of these congested corridors, allowing reduction of Route 9 traffic by about 10% and of Needham Street traffic by almost 20%. Therefore, both transit riders and automobile users would benefit from the restored light rail service.

The combination of new transit ridership and reduced automobile utilization and congestion along presently clogged arterials will allow for a major reduction of pollutants on a regional level. Environmental benefits will accrue in terms of reduced carbon monoxide levels (100 tons), nitrogen oxide (10 tons), volatile organic compounds (10 tons), carbon dioxide (2500 tons), and particulate matter. (Note: these are rough estimates, based on 6000 riders). In addition, fewer cars means less noise and fewer accidents. Taking account a full trip from Needham to Boston, it is likely that annual travel time savings on the order of 1.5 million hours will take place on

implementation of the rail line, and this will result in significant mobility improvements. There will be a net result in annual regional energy consumption of about 50,000 million BTU (British Thermal Units). Therefore, in terms of mobility, environmental benefits, and energy savings, the light rail line will rate highly compared to any other transit projects in the MPO. Certainly, these estimates need to be corroborated with the FTA's *Technical Guidance on Section 5309 New Starts Criteria*, in which case it is likely that federal funding can be appropriated for this project. With federal funding, the net cost of this project to the MBTA can be reduced substantially.

Having light rail service to Needham Heights would drastically improve transit service quality in this region. Because the light rail line would run from 5 AM to 1 AM, with about 6 trips per hour in each direction, transit service would be vastly enhanced in this section of the metropolitan area. Currently, there is no other direct transit access to Boston from the Newton side within 1/2 mile of the corridor. The #59 bus runs from Needham to Watertown twice per hour, bypassing the Needham Industrial Park and Business Center and making stops on Needham Street only about once per hour. Bus operations end around 7 PM and do not run on Sundays. For that reason, current bus ridership does not reflect future rail patronization. The commuter rail line ending at Needham Heights makes the trip to Back Bay, Boston in about 35 minutes. The new light rail line would make the trip in about 25 – 30 minutes, shorter from the Newton side. These travel times compare very favorably with driving, being much faster during rush hours, when travel to Back Bay, Boston can take 40-50 minutes from the Route 128 region along Route 9, not including parking. In terms of pricing, if fares on the rail extension were priced the same as those of the Riverside line, a round trip fare would cost $3.50 (less with a monthly pass, especially one that is employer-subsidized). At the federal tax reimbursement level for driving (about $0.34 per mile), the 20 mile round trip to Boston would cost nearly $7.00, or double the cost of transit. Again, that does not take into account parking availability or cost in Boston, where daily charges for parking frequently exceed $20.

Finally, in terms of environmental justice, this project should score highly. A significant component of environmental justice is providing access to jobs for inner city and core community socially disadvantaged individuals. With 10 million square feet of commercial space and employing about 10,000 workers, the Needham rail line would open tremendous opportunities for citizens of core regions to access jobs. Bus routes which would feed into the line include the #9 (South Boston), the #1 (Roxbury-Dudley), the #66 (Roxbury), the #51 (from Forest Hills). This ridership would entail a significant amount of "reverse commuting" from the City of Boston to the Newton-Needham area, adding to the utility of the line, as trains will be full of riders in both directions frequently during the day. With regards to local low-income households, the line passes adjacent to the largest affordable housing project in Newton (Avalon Bay) and runs adjacent to areas of Newton Upper Falls with a significant number of Newton's low income residents.

Summary

The CTPS and the MBTA should evaluate the parameters of extending light rail from Newton to Needham based on the additional information provided. Specifically, the MBTA should provide an evaluation of the service based on a more effective scope of service (extending the line to Needham Heights, not Needham Junction) and based on ridership estimates that take into account the dense residential and commercial areas adjacent to the line. The full impact of this new rail line

on economic and land use improvements should be assessed, and it environmental benefits reevaluated.

The revised Capital Features of the line are estimated as follows:

Capital Cost	$60,000,000
Operating Cost	$10,000 per weekday
Daily Ridership Increase on Mode	15,000
Net Increase in Daily Transit Ridership	6,000
Capital Cost per New Transit Rider	$10,000
Operating Cost per New Transit Rider	$1.66
Capital Cost/Travel Time Benefit	$15,000 per hour
Operating Cost/Travel Time Benefit	$2.50 per hour
Travel Time Savings (to Copley)	4000 hrs/day

In comparison to other PMT projects, the line would score very favorably with regards to the projects currently listed as high priority. In addition, extending light rail to Needham would be one of the least expensive projects to complete, both in terms of actual cost and in terms of costs per new rider:

Project	Capital Cost	Net daily inc. Ridership	Capital cost/ New Rider	Operating cost/ New Rider
Extend Blue Line to Lynn	$357 million	6,300	$ 56,752	$11.50
Commuter Rail New Bedford	$670 million	7,090	$ 94,499	$ 9.75
Fairmount Line Improvements	$ 70 million	310	$318,182	$ 8.95
Green Line to West Medford	$112 million	3,540	$ 31,571	$11.79
Green Line to Needham	$ 60 million	6,000	$ 10,000	$ 1.66

As the above analysis shows, the Green Line extension to Needham would be among the least expensive projects, both in overall costs and in costs per transit rider.

Very good or excellent ratings should be applied to the Needham light rail extension for all of the parameters in evaluating priority of this project. This applies to utilization, mobility, cost effectiveness, air quality, service quality, economic and land use impacts, and also for environmental justice. The rationale for these ratings is given in the text of this letter.

Finally, in terms of capacity of the Central Subway, this line would add only 6 trips per hour in the subway. With dwell times of about 30 seconds in the underground stations, the new capacity could easily be accommodated. During times of peak transit traffic, an option to reverse direction at Kenmore may be utilized, therefore reducing burden on the subway's segment between Copley and Government Center, where there is highest transit density. Similarly, service on the Green Line west of Newton Highlands to Riverside would be minimally affected. Line volume west of Newton Highlands is about 3000 riders per day. With peak hour headways of 10 minutes on the new line and 6 minutes on the existing Riverside branch, headways on the joint line from Newton Highlands to the Subway would be about 4 minutes. Therefore, about 17,000 of the 20,000 riders of the Riverside line would see increased service.

Regional transportation planning agencies should evaluate the Newton-Needham Green Line extension based on up-to-date demographic and economic information and reasonable study criteria. By such an appraisal, this project should be ranked as high priority within the framework of any future transportation planning and funding process.

Light Rail Extension to Newton Upper Falls and Needham

Fulfilling Boston's MPO Performance Criteria

Introduction and Background:

Future public transportation investments in the Boston MPO must be cost-effective and make our urban neighborhoods more desirable and economically viable. Urban transit policy should promote projects that provide access to large concentrations of people and businesses and that can act as a stimulus for economic growth and prosperity.

As such, the City of Newton Comprehensive Plan adds an important, regionally significant transit expansion project to the Boston Region MPO Transportation Plan for 2004-2025. This project involves extending light rail service from the "D" Green line in Newton along an abandoned railroad bed into Needham for a distance of only 2 miles, ending at the existing Needham Heights commuter rail station (please refer to Figure 1 at the end of this letter). Building this rail line in a highly populated area with a great concentration of commerce will generate high ridership, allow non-auto travel options, and will act as an engine of growth for the region. Because of this project's low relative cost and high public benefit, there is no better example of such a cost-effective transit investment in the entire Boston region MPO.

Based on the criteria set forth by the MPO Transportation Plan and the recent Program for Mass Transportation (PMT), this project should be given high priority for implementation. The project involves extending light rail from the Green Line in Newton Highlands by building a 2-mile spur to access the high density neighborhoods of Newton (Newton Upper Falls and the Needham Street corridor) and a part of Needham identified as an economic growth zone (the Needham Industrial Park and Business Center). This rail extension fulfills all important performance measures:

- **Utilization:** Because the rail line will pass through densely populated areas and a high concentration of commercial and office space, the utilization of this line will be high, with considerable amounts of new transit riders brought into the system. With current conditions, about 5000 new riders will use this system daily, but with full build-out, that number will be closer to 10,000 new riders per day.
- **Mobility:** Currently, mobility is constrained by terrible traffic congestion in the area. The surrounding roadways include Route 9 (50,000 vehicles per day), Route 95/128 (150,000 vehicles per day), and Needham Street (30,000 vehicles per day). Not only will this new line attract new riders wishing a faster trip into Boston, but it will give people the opportunity to avoid driving. It is likely that auto use will be reduced by about 5000-10,000 trips per day once the rail line is up and running.
- **Cost effectiveness:** Because the project will utilize existing railbed, involve no property takings, and require only 2 miles of track construction, the cost will be minimal compared to most other

transit projects. For a project twice the length, extending rail all the way to Needham Junction, the PMT estimated a cost of $99 million. It is likely that changing the scope of the project to end at Needham Heights would reduce the cost to less than $60 million, making it the least costly rail expansion project in the MPO Transportation Plan. Because this line will service up to 10,000 new riders per day, the cost-per-trip ratio will be very favorable.

- **Air quality:** Regional and local air quality will be improved by this project because it will result in new transit riders and it will reduce auto-based trips. Recent data from the Census 2000 shows that the most frequent work destination of Newton residents is Boston (12,917 workers travelling from Newton to Boston per day). Also, there is a significant amount of "reverse commuting" from Boston to Newton (5,971 workers per day travelling from Boston to Newton). By providing a fast and convenient link between an area of high population density and high employment in Newton and the central Boston core, through a region that is otherwise choked with traffic congestion, this rail line will be assured a high ridership, and will thereby result in fewer car trips and improved air quality.
- **Service Quality:** Because the Newton-Needham rail extension will be light rail, with frequent trips, the overall service quality will be excellent. The current commuter rail runs about once every 1-2 hours from Needham, compared to this proposed line that will run about 4-6 times per hour. The new rail line will take about 20-25 minutes to get to Copley from Newton-Needham, compared to 35 minutes by commuter rail and 45 minutes by car, during peak travel times.
- **Economic and Land Use Benefits:** The rail expansion will service an area of dense residential and commercial uses, with stations in both Newton and Needham having the potential to stimulate high density mixed use transit oriented development. There is great potential for economic growth in an area that supports pedestrian oriented facilities and a high quality of life. A planning document envisioning this growth has been drafted by Needham (www.town.needham.ma.us/Documents/PBExecutiveSummary.pdf) and the City of Newton is in the process of completing a build-out analysis for the Needham Street corridor. However, with a new transit line in place, it is likely that even more new growth and development will be induced.
- **Environmental Justice:** By virtue of this line connecting between Boston's central core and areas of potentially lucrative jobs, environmental justice will be served by providing this excellent access to jobs. The line will enable easy and inexpensive travel for inner city residents to access jobs that currently exist and that will be created in this region (Figure 2). By opening the possibility of high density transit oriented development, affordable housing needs will be met near transit stations, again supporting the criteria of environmental justice.

As one can see from this analysis, the Newton – Needham light rail expansion project will meet and exceed all of the criteria that exist for implementation of a transit project into the Boston MPO 2004 Transportation Plan. Most importantly, this project can be done quickly and will have tremendous economic impact. It will be an economic boon not only to the two communities involved, but also to the entire region and to the Commonwealth.

Currently, the 2004 Transportation Plan includes this project in its "universe of projects" based on an evaluation done as part of the Program for Mass Transportation (PMT) process. It is important

to understand that the PMT analysis of this project used flawed methodology to estimate the costs and utilization of this line. For example:

1) The PMT overestimated costs for this project by unnecessarily extending the proposed rail extension to Needham Junction, which is twice the distance. Not only does this increase the capital costs of the project, but it wrongfully eliminates existing commuter rail service that currently accesses more distant, lower density neighborhoods in Needham which are more appropriate for a commuter rail type service. The PMT analysis thereby both increases the cost of the project and decreases ridership-utilization per mile.
2) The PMT analysis used incomplete current base demographic and economic measures. More importantly, the PMT used MAPC demographic and employment projections that have been questioned as inaccurate. Therefore, the PMT greatly underestimated growth in this corridor, especially non-residential, commercial growth. A build-out analysis on the Newton side, which is now being completed, will show the tremendous potential for growth along the Needham Street corridor. On the Needham side, the town plans to add about 2.5 million square feet of new development near the proposed rail line, to comple-ment the existing 5 million square feet of commercial real estate in the Needham Indus-trial Park and Business Center.
3) By improperly studying ongoing and future development in this proposed rail corridor, the PMT process greatly underestimated future utilization of this line. Further information on criticisms of the PMT analysis can be found in the attached letter to Mr. Vijay Mahal, dated March 13, 2003.

Based on utilizing accurate demographic and economic data, the revised capital features of this line are estimated as follow:

Capital Cost:	$60 million
Operating Cost:	$10,000 per weekday
Daily ridership increase on mode:	15,000 riders
Net increase in daily transit ridership:	6,000 riders
Capital cost per new transit rider:	$10,000
Operating cost per new transit rider:	$1.66
Capital cost/Travel time benefit:	$15,000 per hour
Operating cost/Travel time benefit:	$2.50 per hour
Travel Time Savings (to Copley):	4000 hours/day

In comparison to other Boston MPO public transportation projects, the line would score very favorably with regards to the projects as listed “high priority” in the recent PMT. This project would be the least expensive project to complete, both in terms of actual cost and in terms of costs per new rider. As for operating costs, with a base fare of $2.50, each passenger would more than cover their cost ($1.66 per new transit rider).

Table 1: Newton-Needham project compared to other potential rail transit projects

Project	Capital Cost	Net daily inc. Ridership	Capital cost/ New Rider	Operating cost/ New Rider
Extend Blue Line to Lynn	$357 million	6,300	$ 56,752	$11.50
Commuter Rail New Bedford	$670 million	7,090	$ 94,499	$ 9.75
Fairmount Line Improvements	$ 70 million	310	$318,182	$ 8.95
Green Line to West Medford	$112 million	3,540	$ 31,571	$11.79
Green Line to Needham	$ 60 million	6,000	$ 10,000	$ 1.66

As the preceding analysis shows, the Green Line extension to Needham would be among the least expensive projects, both in overall costs and in costs per transit rider. The Boston MPO 2004 Transportation Plan projects that the MBTA will have capital funds from 2004-2025 totaling $10.885 billion. At a projected cost of $60 million, the proposed Newton-Needham rail extension would consume less than 1% of that budget!

Very good or excellent ratings can be applied to this project. This applies to utilization, mobility, cost effectiveness, air quality, service quality, economic and land use impacts, and also for environmental justice. The project's context and possible impacts, by MPO policy area, can be categorized as follows:

Policy 1: Land Use
The project will integrate transportation and land use policies to promote high density, transit oriented development to already developed neighborhoods in Newton and Needham. This will result in more efficient use of the regional transportation system, bringing jobs, housing, shopping, and services closer together. The areas traversed by the proposed rail line have been identified in local plans as being suitable for concentrated development. Bringing rail transportation will have a positive benefit in supporting pedestrian oriented and transit oriented development, with an affordable housing component. Establishing rail would utilize an existing rail right-of-way, maximizing its public benefit.

Policy 2: Safety
This project area includes several high automobile crash locations: Highland Avenue at I-95/128, Highland Avenue at Webster Street, and Highland Avenue at Wexford Street. Between 1997 and 1999, the Highland Avenue at I-95/128 intersection was the site of 197 crashes, of which 119 involved property damage and 78 involved bodily injury. The Highland Avenue/Webster Street intersection was the sight of 39 crashes, of which 24 involved property damage and 15 involved bodily injury. The Highland Avenue at Wexford Street intersection was the site of 41 crashes, of which 27 involved property damage and 14 involved bodily injury. By reducing auto dependence in this corridor, the Newton – Needham rail extension will confer positive safety benefits on travelers.

Policy 3: Mobility
Currently, the Highland Avenue/Needham Street corridor is poorly serviced by public transportation. Extending light rail into this corridor will improve mobility for all users by providing a safe, reliable, and convenient public transportation option. It will reduce reliance on single occupant vehicles and improve transit service by making it faster and more convenient than existing commuter rail to Boston. Reverse commuting options will be improved, providing access to a high density of jobs to inner city residents. Overall transportation capacity will be expanded in an area of high automobile congestion.

Policy 4: Pollution
This line will result in new transit ridership and decrease auto-based trips. By removing cars from the roads, regional and local environmental benefits will accrue. Transit oriented development at stations will foster pedestrian oriented zones that will promote reduced trips and lead to long-term air quality benefits, reduced energy consumption, and overall natural resource protection.

Policy 5: Connectivity
The light rail extension will allow for a multimodal transportation system, with various modes complementing each other. There will be an interconnection to the regional rail system by virtue of the line's integration with regular Green Line services to Park Street. An intermodal connection to commuter rail will exist at Needham Heights. Opportunities will exist for vehicle and bicycle parking along the stations of the line. Pedestrian connections will be enhanced between residential and commercial zones, fostering walkable environments.

Policy 6: Accessibility
By creating a new transit link, the proposed line will offer access to transportation services to all people, regardless of physical limitations, economic status, age, or ethnicity. Stations and rail cars will be ADA compliant. Elderly, youth, and disabled users who cannot utilize automobile transport will have improved options for public transportation.

Policy 7: Environmental Justice
The Newton – Needham light rail extension will provide access to jobs for inner city residents. Without this type of access to public transportation, this economic growth zone would otherwise be accessible primarily through automobile use. Public transportation will provide convenient, inexpensive, and frequent access to sources of employment in this corridor.

Policy 8: Modernization of Existing Transportation System
The proposed light rail extension would be the best possible use of an existing abandoned right of way. It would be the first expansion of light rail service since the highly successful Riverside line was initiated in 1959.

Policy 9: Promote Public Involvement
There is a large and significant grass roots effort in support of the Newton – Needham light rail extension project. The project is supported by many entities in the local community, including residents and business owners. It is also supported by important public officials in both Newton and Needham.

Policy 10: Economic Opportunities
The proposed light rail project will access areas of economic growth, including the Needham Street corridor in Newton (2.5 million sq.ft. commercial space) and the Needham Industrial Park and Business Center in Needham (5 million sq.ft. commercial space with 2.5 million sq.ft. planned). These areas are targeted for further economic development. This new econ-omic development will create jobs and allow for growth in the local and state-wide tax base.

Policy 11: Community Character
Rail extension will improve community character by allowing transit oriented development, complementing the historic pattern of development of Newton and Needham's surrounding villages. By providing pedestrian interconnections, stations on the line will serve to reintegrate neighborhoods otherwise separated by the currently abandoned right of way.

Policy 12: Efficient use of Financial Resources
The Newton-Needham rail extension project is a relatively low cost project that will confer economic benefits on the affected communities and on the Commonwealth by virtue of its impacts on economic growth and community revitalization. The project involves only about 2 miles of track work on an existing right of way. No property takings are necessary along the route. Public-private partnerships can be invoked in maintaining station and parking facilities, which may be shared with adjacent businesses.

Summary

It is apparent from the criteria set above that the Newton-Needham rail expansion project will effectively advance the Boston MPO's overall goals of sustainable development. Issues such as congestion, sprawl, and air quality will be improved. Economic growth and vitality will be enhanced while options are provided to auto-based travel. New land use practices in terms of transit oriented development are possible, maximizing utilization of infrastructure and improving quality of life. The disadvantaged and those with low incomes will benefit from this transit expansion project, as outlined above. The CTPS and the MPO should include the Newton-Needham light rail extension as a high priority project in future Regional Transportation Plans.